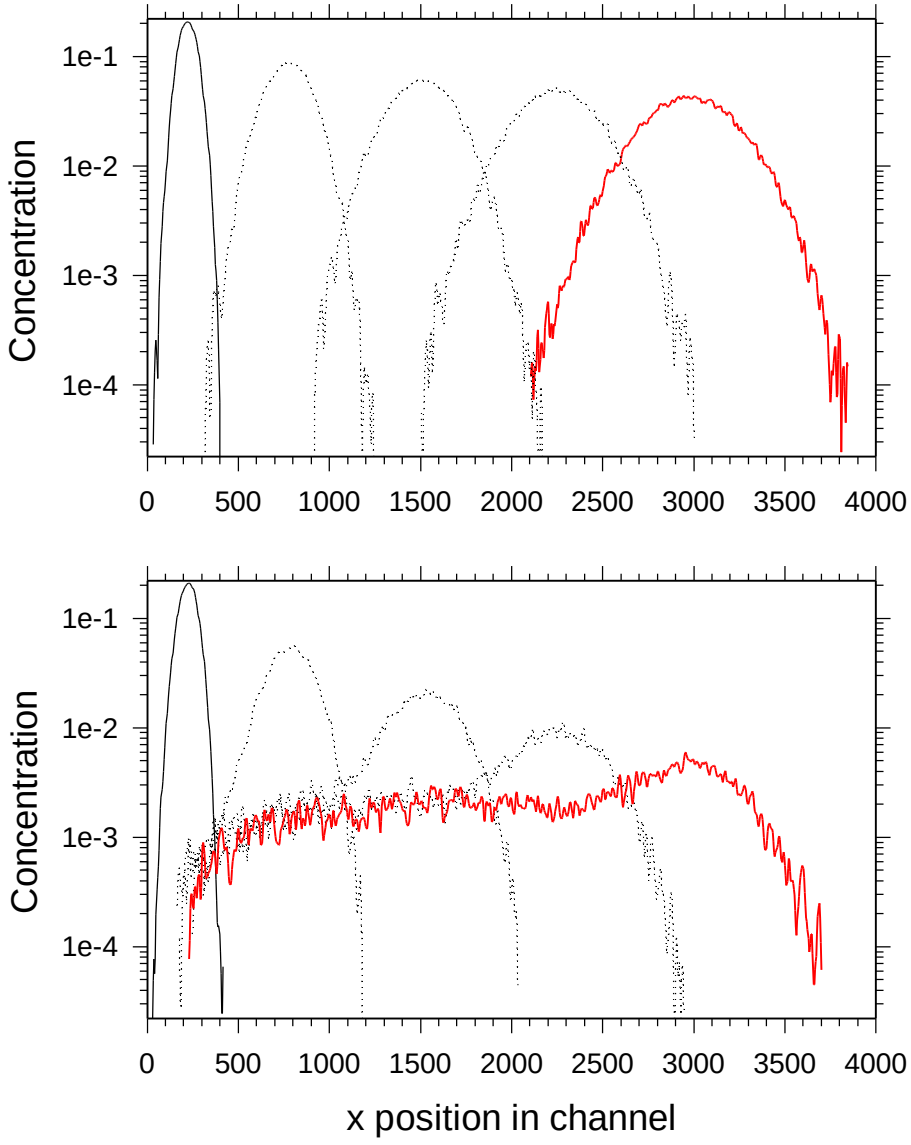
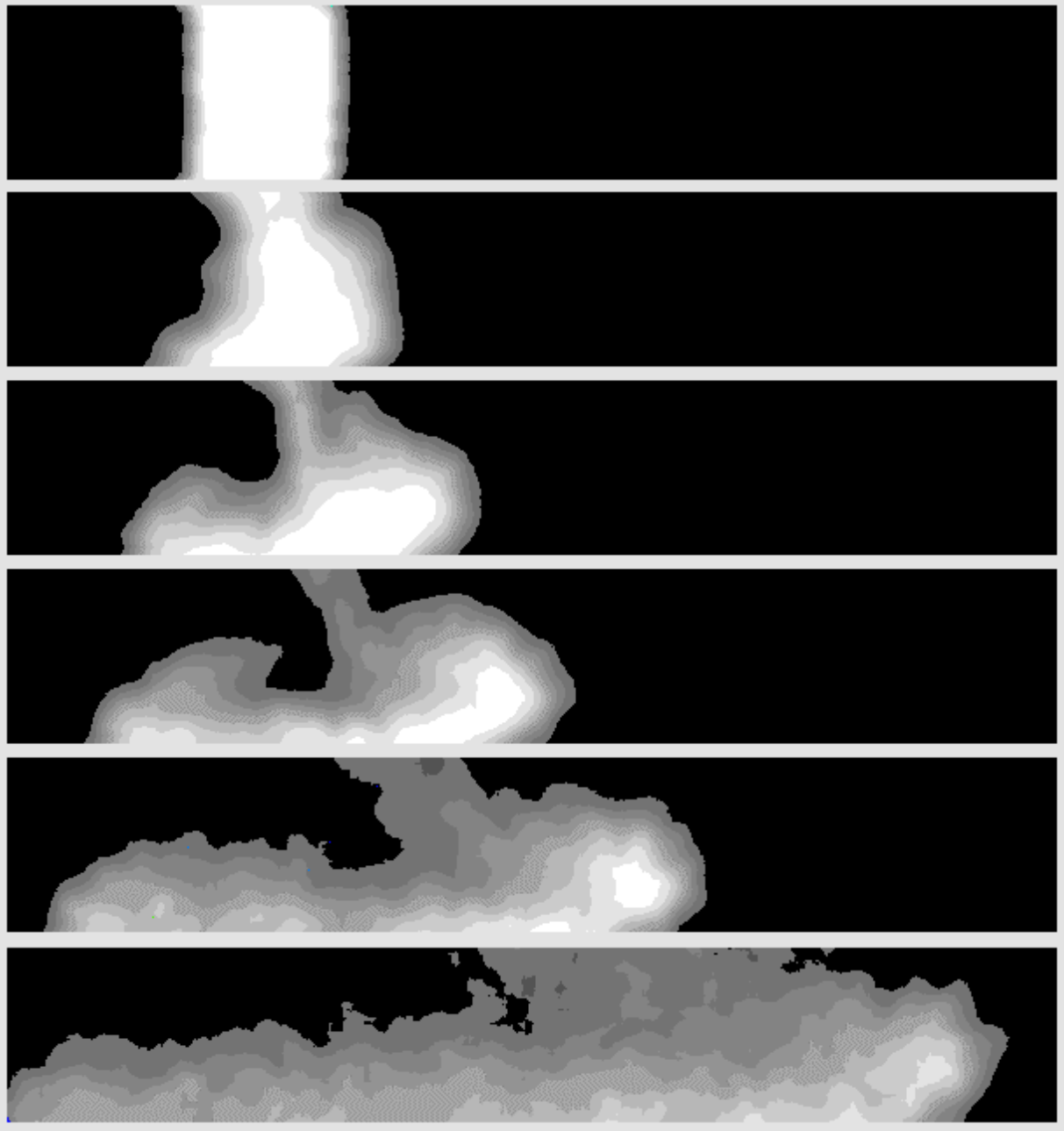
RESEARCH HIGHLIGHTS
Basic Energy Sciences Program
Geosciences Subprogram

Shapes of tracer pulses at 5 different times in a planar channel, Pe = 9.35. Top: non-sorbing solute. Bottom: sorbing solute, Da = 0.18. Note the *peak* positions travel at approximately the same speed, but the m_1 (first moments) do not.





Six stages in the dispersion of a slug (white) that is initially ≈1% denser than the carrier fluid (black). Flow is left to right; these frames show only ≈6% of the entire channel length. The slug rapidly falls to the bottom of the channel, then disperses both forward and backward due to buoyancy-driven advection. Molecular diffusion gradually lessens the buoyancy contrast.